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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/783,134

02/15/2001

Jeong-hoon Park

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07/16/2004

SUGHRUE, MION, ZINN
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

KADING, JOSHUA A

ART UNIT

PAPER NUMBER

2661

7

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,134

Applicant(s)

PARK ET AL.

Examiner

Joshua Kading

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 15-31 and 35-44 is/are rejected.
- 7) ☒ Claim(s) 12-14 and 32-34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5_6_.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Notice of References Cited

Application/Control No.

09/783,134

Applicant(s)/Patent Under
Reexamination
PARK ET AL.

Examiner

Joshua Kading

Art Unit

2661

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,507,590	01-2003	Terho et al.	370/466
	B	US-5,657,316	08-1997	Nakagaki et al.	370/394
	C	US-6,728,208	04-2004	Puuskari, Mikko	370/230.1
	D	US-5,642,365	06-1997	Murakami et al.	714/761
	E	US-6,556,556	04-2003	Sen et al.	370/342
	F	US-5,541,919	07-1996	Yong et al.	370/416
	G	US-6,574,223	06-2003	Brueckheimer et al.	370/395.6
	H	US-5,570,362	10-1996	Nishimura, Takashi	370/466
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are
5 required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings
10 will not be held in abeyance.

Claim Objections

Claims 1, 2, and 38 are objected to because of the following informalities:

Claims 1, 2, and 38 state in the preamble the phrase "and/or". The word "and"
15 gives the claims a different meaning than "or" in the context of the preambles. Thus leading to a vague and indefinite situation. Therefore it is suggested that applicant change the phrase "and/or" to --and--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

20 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2661

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 3 is rejected under 35 U.S.C. 102(e) as being anticipated by Terho et al. (U.S. Patent 6,507,590 B1).

Regarding claim 3, Terho discloses “a wireless data transmitting method (col. 8, lines 5-6 whereby sending packets via a mobile phone means the system is wireless) comprising the steps of:

(a) when a length of a collection of data in a predetermined layer is longer than a length of a payload of a protocol, dividing the collection of data in the predetermined layer into a plurality of protocol units of data (figure 7, where element 58 is a user packet (application layer) that is split into two smaller packets 61 (protocol units) where the figure clearly indicates the size of the protocol units must be smaller than the application layer, see col. 8, lines 1-15 for a further explanation of figure 7); and

(b) transmitting the protocol units of data of the lower layer, after adding at least one of length information and location information of the data divided into the protocol units (col. 8, lines 1-15 where length information is included in header 59 and location information is included in the Frame Check Sequence 64).”

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

5 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10 Claims 1, 2, 4-8, 15-17, 21-28, and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terho et al. (U.S. Patent 6,507,590 B1) in view of Nakagaki et al. (U.S. Patent 5,657,316).

15 Regarding claim 1, Terho discloses "a wireless data transmitting [and] receiving method comprising the steps of:

(a) when a length of a collection of data in an application layer is longer than a length of a payload of a protocol, dividing the collection of data into a plurality of protocol units (figure 7, where element 58 is a user packet (application layer) that is split into two smaller packets 61 (protocol units) where the figure clearly indicates the size of the protocol units must be smaller than the application layer, see col. 8, lines 1-15 for a further explanation of figure 7), and transmitting the protocol units of data after adding at least one of length information and location information of the data divided into the protocol units (col. 8, lines 1-15 where length information is included in header 59 and location information is included in the Frame Check Sequence 64)..."

25 However, Terho lacks what Nakagaki discloses, "(b) determining whether or not a loss of data occurred, by referring to the information on the length and location of data

divided into the protocol units in the step (a) (figure 3A where the missing frame sequence numbers (location identifiers) indicate a loss of data), and inserting blank data into a part corresponding to the lost data to re-form the entire collection of data (figure 3B where the dummy frames (blank data) are inserted in the place of the missing frame sequence numbers)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the determining of loss of data and inserting blank data for the purpose of creating the original data length. The motivation for doing this is so the appropriate transmission protocol so the data may be transmitted properly (Nakagaki, col. 2, lines 22-30).

Regarding claim 5, Terho discloses "a wireless data receiving method wherein application data is divided into a plurality of predetermined protocol units (figure 7, where element 58 is a user packet (application layer) that is split into two smaller packets 61 (protocol units) where the figure clearly indicates the size of the protocol units must be smaller than the application layer, see col. 8, lines 1-15 for a further explanation of figure 7), and a bit stream, in which at least one of length information and location information of data divided into the protocol units is added, is received (col. 8, lines 1-20 where length information is included in header 59 and location information is included in the Frame Check Sequence 64)..."

However, Terho lacks what Nakagaki discloses, the method steps comprising "(a) receiving the predetermined protocol units in a predetermined sequence, and

checking whether or not data is lost, by referring to the information on the length and location of data added to each of the predetermined protocol units (figure 3A where the missing frame sequence numbers (location identifiers) indicate a loss of data); and

(b) when the result of checking in the step (a) indicates that data is lost from the protocol units, re-forming the collection of data by adding an amount of blank data equal to an amount of data lost, into a part from which the data was lost, and then transmitting the re-formed data to an upper layer (figure 3B where the dummy frames (blank data) are inserted in the place of the missing frame sequence numbers and col. 2, lines 1-18 describe sending the re-formed data to the upper layer for further processing)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the determining of loss of data and inserting blank data for the purpose of creating the original data length. The motivation for doing this is so the appropriate transmission protocol so the data may be transmitted properly (Nakagaki, col. 2, lines 22-30).

Regarding claims 2 and 4, Terho and Nakagaki disclose the methods of claims 1 and 3. Although Terho and Nakagaki do not explicitly disclose "a lower layer supports the protocol", it is obvious to one with ordinary skill in the art that the lower layer(s) support the protocol. As is known in the art, layered communications must have each lower layer supporting the protocol used by each layer above it. If they didn't the transition from one layer to the next could not happen. The motivation for having the lower layer(s) support the upper layer protocol is the same as that for claims 1 and 3.

Regarding claims 6, 7, and 8, Terho and Nakagaki disclose the methods of claims 1, 2, and 5. However, Terho lacks what Nakagaki further discloses, "in the step (b), blank data is generated by referring to information on the length and location of data, which is added to a header of a preceding or succeeding protocol unit (figure 3B where the dummy frames (blank data) are inserted in the place of the missing frame sequence numbers (location identifiers) and where the header information is as described in claims 1 and 5, i.e. Terho col. 8, lines 1-20)." It would have been obvious to one with ordinary skill in the art at the time of invention to have the blank data generated by referring to the length and location of the data for the same reasons and motivation as in claims 1, 2, and 5.

Regarding claims 15, 16, and 17, Terho and Nakagaki disclose the methods of claims 1, 2, and 5. However, Terho lacks what Nakagaki further discloses, "in the step (b), when the loss of data from the protocol units is determined, signaling whether or not the blank data is inserted, to an upper layer (col. 2, lines 8-30 whereby inserting the dummy cells at the "data length compensating device" an upper layer of the protocol has been signaled as to the loss of the data units and attempts to remedy the situation through inserting dummy cells)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the signaling an upper layer as to the loss of data for the same reasons and motivation as in claims 1, 2, and 5.

Regarding claims 21-28 and 35-37, Terho and Nakagaki disclose the independent methods of claims 1, 3 and 5 which claims 21-28 and 35-37 all depend. However, Nakagaki lacks what Terho further discloses, "the protocol is a radio link protocol (RLP) (col. 8, lines 5-15)." It would have been obvious to one with ordinary skill in the art at the time of invention to have "the protocol" be a radio link protocol because the communication is done wirelessly. The motivation for have a radio link protocol is to allow the non-wireless communication to be transmitted and received wirelessly thus connecting two types of network in communication, i.e. a land based communication network and a wireless network.

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Regarding claim 38, Terho discloses "an apparatus for transmitting [and] receiving wireless data, comprising:

a transmitting means (col. 8, lines 5-6 where the mobile phone is the transmitting means) for dividing a collection of data in an application layer into a plurality of protocol units, adding at least one of length information and location information of the data, to a header of each unit and transmitting the protocol units (figure 7, where element 58 is a user packet (application layer) that is split into two smaller packets 61 (protocol units) where the figure clearly indicates the size of the protocol units must be smaller than the application layer, see col. 8, lines 1-15 for a further explanation of figure 7; col. 8, lines 1-20 where length information is included in header 59 and location information is included in the Frame Check Sequence 64)..."

15

20

However, Terho lacks what Nakagaki discloses, "a receiving means (col. 2, line 13) for determining whether or not data included in the protocol units is lost, by referring to the information on the length and location of the data added to the header of each of the predetermined protocol units received from the transmitting means (figure 3A where
5 the missing frame sequence numbers (location identifiers) indicate a loss of data), and re-forming the collection of data by inserting blank data into any part from which data is lost (figure 3B where the dummy frames (blank data) are inserted in the place of the missing frame sequence numbers)."

It would have been obvious to one with ordinary skill in the art at the time of
10 invention to include the determining of loss of data and inserting blank data for the purpose of creating the original data length. The motivation for doing this is so the appropriate transmission protocol so the data may be transmitted properly (Nakagaki, col. 2, lines 22-30).

15 Regarding claim 40, Terho and Nakagaki disclose the apparatus of claim 38. However, Nakagaki lacks what Terho further discloses, "a data determining unit for comparing a length of the collection of data in the application layer with a size of a payload (col. 8, lines 1-15 where it is implied that there is a data determining unit by the fact that the user packet is either put in a single RLP frame or it is divided into several,
20 such a decision must be made based on a comparison of lengths); and a format processing unit for dividing the collection of data into a plurality of protocol units when the length of the application layer is longer than the length of the payload, and adding at

least one of the information and the location information of the divided data to the header of each protocol unit (col. 8, lines 5-15 where it is again implied that there is a format processing unit to divide the user data among several of the RLP data blocks).” It would have been obvious to one with ordinary skill in the art at the time of invention to
5 include the data determining unit and format processing unit for the same reasons and motivation as in claim 38.

Regarding claims 39 and 41, Terho and Nakagaki disclose the apparatus of claims 38 and 40. Although Terho and Nakagaki do not explicitly disclose “a lower layer
10 supports the protocol”, it is obvious to one with ordinary skill in the art that the lower layer(s) support the protocol. As is known in the art, layered communications must have each lower layer supporting the protocol used by each layer above it. If they didn’t the transition from one layer to the next could not happen. The motivation for having the lower layer(s) support the upper layer protocol is the same as that for claims 38 and 40.

15

Regarding claim 42, Terho and Nakagaki disclose the apparatus of claim 38. However, Nakagaki lacks what Terho further discloses, “a packet extracting unit for extracting header information and payload from each protocol unit while transmitting data received from the transmitting means to an upper layer (col. 8, lines 23-36 where
20 the data adapter extracts the data from the RLP layer and then sends the appropriate parts of the data to the portable computer or an upper layer for further processing)”.

Terho also lacks what Nakagaki further discloses, "a data processing unit (col. 2, lines 22-25 where although the existence of a data processing unit is not mentioned, it is assumed there must be a processing unit inside the receiving terminal configured to detect lost data) for determining whether or not data included in the protocol units is lost, by referring to information on the length and location of data added to the header (col. 2, lines 22-25), and re-forming the whole collection of data by inserting blank data into any part from which data is determined to be lost (col. 2, lines 26-30)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the packet extracting and data processing with the apparatus of claim 38 for the same reasons and motivation as in claim 38.

Regarding claim 43, Terho and Nakagaki disclose the apparatus of claim 42. However, Terho lacks what Nakagaki further discloses, "the data added to the header is extracted by the packet extracting unit (col. 2, lines 19-25 where the sequence number is part of the header and must be extracted to determine if the sequence is progressing without loss of data)." It would have been obvious to one with ordinary skill in the art at the time of invention to have the header data extracted for the same reasons and motivation as in claim 42.

Regarding claim 43, Terho and Nakagaki disclose the apparatus of claim 42. However, Terho lacks what Nakagaki further discloses, "the data processing unit signals whether or not blank data is inserted, to an upper layer (col. 2, lines 8-30 whereby

inserting the dummy cells at the "data length compensating device" an upper layer of the protocol has been signaled as to the loss of the data units and attempts to remedy the situation through inserting dummy cells)." It would have been obvious to one with ordinary skill in the art at the time of invention to have the signaling of blank data to the upper layer for the same reasons and motivation as in claim 42.

Claims 9-11, 18-20, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terho et al. and Nakagaki et al. as applied to claims 1 and 5 above, and further in view of Puuskari (U.S. Patent 6,728,208 B1).

Regarding claims 9-11, Terho and Nakagaki disclose the methods of claims 1, 2, and 5. However, Terho and Nakagaki lack what Puuskari discloses, "in the step (b), when data in the first protocol unit of the plurality of protocol units is lost, not transmitting all of the protocol units to the upper layer (col. 4, lines 46-54 although it is not stated that the first protocol unit is lost, the same principal of dropping packets to maintain quality in the real-time environment applies to all protocol units)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the dropping of the packets with the methods of claims 1, 2, and 5 for the purpose of maintaining an acceptable level of real-time quality communications (Puuskari, col. 4, lines 51-54). The motivation for wanting an acceptable level of quality in a real-time environment is so that data received in the future is not lost or corrupted due to the retransmission of a previous lost piece of data.

Regarding claims 18-20, Terho and Nakagaki disclose the methods of claims 1, 2, and 5. However, Terho and Nakagaki lack what Puuskari discloses, "in the step (b), when the loss of data from the protocol units is determined, determining whether or not to transmit the data according to a characteristic of an application layer (col. 4, lines 46-54 where the traffic type is a characteristic of an application layer)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the determining whether or not to transmit based on a characteristic of the application layer with the methods of claims 1, 2, and 5 for the purpose of maintaining an acceptable level of real-time quality communications (Puuskari, col. 4, lines 51-54). The motivation for wanting an acceptable level of quality in a real-time environment is so that data received in the future is not lost or corrupted due to the retransmission of a previous lost piece of data.

Regarding claims 29-31, Terho, Nakagaki, and Puuskari disclose the methods of claims 1, 2, and 5. However, Nakagaki and Puuskari lack what Terho further discloses, "the protocol is a radio link protocol (RLP) (col. 8, lines 5-15)." It would have been obvious to one with ordinary skill in the art at the time of invention to have "the protocol" be a radio link protocol because the communication is done wirelessly. The motivation for have a radio link protocol is to allow the non-wireless communication to be transmitted and received wirelessly thus connecting two types of network in communication, i.e. a land based communication network and a wireless network.

Allowable Subject Matter

Claims 12-14 and 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (703) 305-0342. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KENNETH VANDERPUYE
PRIMARY EXAMINER


Joshua Kading
Examiner
Art Unit 2661

July 9, 2004

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